AMENDMENTS TO THE CLAIMS

Claims 1-11 (Canceled).

Claim 12 (Previously amended): A method for treating Parkinson's disease in a subject comprising:

identifying one or more regions of the brain that require modification;

delivering a vector comprising a nucleotide sequence encoding a glutamic acid decarboxylase (GAD) to the region of the brain; and

expressing the GAD in the region of the brain in an amount effective to treat or reduce Parkinson's disease.

Claim 13 (Original): The method of claim 12, wherein the vector is a viral vector.

Claim 14 (Original): The method of claim 13, wherein the a viral vector is selected form the group consisting of adenovirus vectors, herpes virus vectors, parvovirus vectors, and lentivirus vectors.

Claim 15 (Original): The method of claim 13, wherein the a viral vector is an adeno-associated viral vector.

Claim 16 (Original): The method of claim 12, wherein the vector is a non-viral vector.

Claim 17 (Original): The method of claim 16, wherein the non-viral vector is a liposome-mediated delivery vector.

Claim 18 (Currently amended): The method of claim 12, wherein the region of the brain is selected from the group consisting of basal ganglia, subthalmic nucleus (STN), pedunculopontine nucleus (PPN), substantia nigra (SN), thalmus, ~~hippocampus, cortex,~~ and combinations thereof.

Claim 19 (Original) The method of claim 12, wherein the region of brain is the subthalmic nucleus (STN).

Claims 20-25 (Withdrawn)

Claim 26 (Previously added): A method for treating Parkinson's disease in a subject comprising:

identifying one or more regions of the brain that require modification;

delivering an adeno-associated viral (AAV) vector comprising a nucleotide sequence encoding a glutamic acid decarboxylase (GAD) to the region of the brain; and

expressing the GAD in the region of the brain in an amount effective to treat or reduce Parkinson's disease.

Claim 27 (Previously added): The method of claim 26, wherein the adeno-associated viral vector is selected from the group consisting of AAV-1 AAV-2, AAV-3, AAV-4, AAV-5 and AAV-7.

Claim 28 (Previously added): The method of claim 26, wherein the adeno-associated viral vector is AAV-2.

Claim 29 (Currently amended): The method of claim 26, wherein the region of the brain is selected from the group consisting of basal ganglia, subthalmic nucleus (STN), pedunculopontine nucleus (PPN), substantia nigra (SN), thalmus, ~~hippocampus, cortex,~~ and combinations thereof.

Claim 30 (Previously added): The method of claim 26, wherein the region of brain is the subthalmic nucleus (STN).

Claim 31 (Previously added): The method of claim 26, wherein the region of brain is the substantia nigra (SN).

Claim 32 (New): A method of altering expression of glutamic acid decarboxylase (GAD) in a region of the central nervous system (CNS) of a subject comprising:

identifying a target site in the CNS that requires modification;

delivering a vector comprising a nucleotide sequence encoding glutamic acid decarboxylase (GAD) to the target site in the CNS; and

expressing GAD in the target site.

Claim 33 (New): The method of claim 32, wherein the vector is a viral vector.

Claim 34 (New): The method of claim 33, wherein the a viral vector is selected from the group consisting of adenovirus vectors, herpes virus vectors, parvovirus vectors, and lentivirus vectors.

Claim 35 (New): The method of claim 33, wherein the a viral vector is an adeno-associated viral vector.

Claim 36 (New): The method of claim 32, wherein the vector is a non-viral vector.

Claim 37 (New): The method of claim 36, wherein the non-viral vector is a liposome-mediated delivery vector.

Claim 38 (New): The method of claim 32, wherein the vector is delivered using stereotaxic delivery.

Claim 39 (New): The method of claim 32, wherein the target site in the central nervous system is a region of the brain.

Claim 40 (New): The method of claim 39, wherein the region of the brain is selected from the group consisting of basal ganglia, subthalmic nucleus (STN), pedunculopontine nucleus (PPN), substantia nigra (SN), thalmus, hippocampus, cortex, and combinations thereof.

Claim 41 (New): The method of claim 39, wherein the region of brain is the subthalmic nucleus (STN).

Claim 42 (New): The method of claim 32, wherein the subject has a neurodegenerative disorder.

Claim 43 (New): The method of claim 42, wherein the neurodegenerative disorder is Parkinson's disease.

Claim 44. (New): A method of altering expression of glutamic acid decarboxylase (GAD) in a region of the central nervous system (CNS) of a subject having a disorder which causes morphological and/or functional abnormality of a neural cell or population of neural cells comprising:

identifying a target site in the CNS that requires modification;

delivering a vector comprising a nucleotide sequence encoding glutamic acid decarboxylase (GAD) to the target site in the CNS; and

expressing GAD in the target site.

Claim 45 (New): The method of claim 44, wherein the vector is a viral vector.

Claim 46 (New): The method of claim 45, wherein the a viral vector is selected from the group consisting of adenovirus vectors, herpes virus vectors, parvovirus vectors, and lentivirus vectors.

Claim 47 (New): The method of claim 45, wherein the a viral vector is an adeno-associated viral vector.

Claim 48 (New): The method of claim 44, wherein the vector is a non-viral vector.

Claim 49 (New): The method of claim 48, wherein the non-viral vector is a liposome-mediated delivery vector.

Claim 50 (New) The method of claim 44, wherein the vector is delivered using stereotaxic delivery.

Claim 51 (New): The method of claim 44, wherein the target site in the central nervous system is a region of the brain.

Claim 52 (New) The method of claim 51, wherein the region of the brain is selected from the group consisting of basal ganglia, subthalmic nucleus (STN), pedunculopontine nucleus (PPN), substantia nigra (SN), thalmus, hippocampus, cortex, and combinations thereof.